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**The Concepts of Work and Care  
An Economic Perspective  
Applied to Britain and Denmark**

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# THE CONCEPTS OF WORK AND CARE - AN ECONOMIC PERSPECTIVE APPLIED TO BRITAIN AND DENMARK<sup>1</sup>

by

JENS BONKE<sup>2</sup>

*The delimitation of economic activities is discussed here finding an operational definition for empirical studies of the distribution of housework and care. By employing time-budget survey data the prices of marriage, having children and divorce measured in time-units are found to be higher for British women than for Danish women, although a trend appears in both countries for women as well as for men towards lower marriage cost and higher child cost. The explanation may be that the family structure in Britain is more traditional than that in Denmark.*

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<sup>1</sup> This article was written as a Forum Fellow, European University Institute, Florence. Prof. Jonathan Gershuny, University of Essex, is greatly acknowledged for giving access to the British data, and Prof. Franca Bimbi, University of Padua, Italy, and Lecturer Diemut Bubeck, London School of Economics, Britain, for comments on an earlier draft. The full responsibility, however, remains that of the author.

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*The article also includes a discussion of evaluation methods concerning the money value of household work, and it is found that British households do care work for other adults and children equal to 13 per cent the National Income, while the contribution by Danish household is calculated to 11 per cent. Correspondingly, the money value of the total household work are estimated to 35 and 25 per cent in Britain and Denmark, respectively.*

## INTRODUCTION

The key issue of Home Economics is the households' contribution to economic welfare. This was a research topic in the '20s and '30s in the US, where a great part of the population moved from rural to urban areas, and in Europe and other western countries in the '60s and '70s, when many women moved into the workforce. In both periods the households became more and more subordinate to the market economy, as household work was substituted by paid work. Today the topic is once more on the agenda because of many families' more complicated everyday life, and there is a demand for international comparisons of the relationship between a person's working life and his/her family life. In the future care



for the elderly seems to become an argument for placing more emphasis on the households' contribution to economic welfare between generations.

The main purpose of this article is to discuss and clarify the overall concept of work, with emphasis on housework and care - referred to in the following as household work. This will include the meaning of economic welfare. Within this framework it will be argued that it appears appropriate not only to take the production in the formal economy into consideration, but also production in the households. The implication is that we have to make a distinction between productive activities on the one hand and non-productive activities - leisure time - on the other.

This article also includes reflections on the measurement of time-use as a common nominator of women's and men's contributions to economic welfare.

Another question which is raised in this article concerns the distribution of time among women and men in performing household tasks. To what extent is there a division of household work between the spouses, and what does the presence of children

mean for the production of economic welfare? The concept of care is introduced and how to measure the amount of care work is also considered.

Finally, the number of hours in household work, including care work, performed in British and Danish households<sup>3</sup> are given, as are estimations of the money value of that work for different countries. Hereby, a considerable amount of production outside the formal economy which is left out of the National Accounts and of Labour Statistics is quantified.

## CONCEPTS OF WORK

It is widely known that the Gross National Product (GNP) does not include all economic activities in society. Only goods and services produced for sale in private firms or in non-profit organizations, or services produced in the public sector constitute the System of National Accounts (United Nations, 1968). Consequently activities outside the formal economy - the private,

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<sup>3</sup> The household production in Spanish households was also under consideration for this article. However, the Spanish Time Budget Survey does not include information about the presence of children in the families.



non-profit and public sector - are excluded, although they may contribute to economic welfare. According to the leader of the National Accounts Division, Statistics Sweden: "...it should be of essential importance to improve the statistical illustration, among others, of different kind of productions in the home, as homework, care work etc. The shortage of those information may cause wrong conclusions drawn by the existing statistics" (Tengblad, 1981). The problem appears in particular, when household production amplifies different from the GNP, and is large-scaled. In this case an extended measure of production is required to state the trend of economic development, and to obtain a more accurate picture of economic welfare. Another objective of integrating household production into the National Accounts frame-work is to render the large amount of work done by women more visible, because "...any reasonable statement, however low, of the money value of her work would raise the popular estimate of her economic importance" (Kneeland, 1929: 38).

Some economists have demonstrated the inconsistency of separating comparable productive activities by pointing out that if a man marries his paid housekeeper the GNP is reduced, independently of how this action influences the amount of

household work done. Nor is the effect on household work due to the increasing labour market participation rate of women taken into consideration; only the income of paid work counts in the GNP. This calls for more appropriate measurements of economic welfare, measurements which take into account the effects of institutional changes on the amount and composition of all productive activities.

The immediate implication of requiring comparability and integrating all productive activities into the same accounting system is that Do-It-Yourself activities may be considered productive, if they are seen as substitutes for market goods, as Hill (1979) states. Thus, all activities which can alternatively be done by a third person in or outside the household as a market or non-market activity belong to the category of productive activities, as stated by the "third person criteria" originated by Reid (1936). Hereby, a distinction is made between productive and non-productive activities; the latter are characterized as having no substitutes and the former as having possible substitutes, i.e. utility only obtained by "the doing" versus utility also obtainable by consuming the output of "the doing".



The introduction of the third person criteria means an essential enlargement of the concept of production so that it includes shopping, housework (preparation of food, laundry, cleaning, etc.), repair and maintenance of durable goods and houses, and care work in the households. According to Chadeau (1985) care for oneself also has to be included, if this can be offered by others. The reason for this kind of care work being excluded in many studies is that of social norms rather than its being based on theoretical considerations, Chadeau argues.

Hill (1977) employs a good and service criterion to separate productive activities from other activities. As productive activities are those whose outcomes are goods and services, the crucial question is what exactly these categories mean. The definition of goods is obvious, as these entail physical objects, which are transactable as well as marketable. Services, on the other hand, are more difficult to define; Hill mentions that economists have considered these as being residuals, i.e. the outcome of non-productive work.

Because of Marx's definition of productive work as work producing value for the capitalist, all production of goods is

deemed productive. The transportation of goods also belongs to this category, and even the teacher, who "... is not only swotting up the heads of the pupils, but also plods himself to make the capitalists even richer" (Marx, 1971: 723). However, most services are conceived of as being non-productive, according to Marx, including the work done by paid housekeepers, not to mention unpaid household work. This is in accordance with the considerations of Adam Smith in "The Wealth of Nations", where he states that: "The labour of a menial servant, on the contrary, adds to the value of nothing" (Robinson, 1962: 43).

The view of services as non-productive work was reflected in The System of Material Product Balances (MPS) of the former Soviet Union and the Eastern European Countries, where "Only the production of material services, together with that of goods, is covered by the gross output (global product) concept of the MPS" (United Nations, 1982: xix).

The neoclassical economists found the distinction between goods and services to be of no particular importance, for which reason they called services immaterial goods or simply goods. This is, in fact, the same as making no distinction.



Hill (1977), on the other hand, claims that there is a fundamental difference between goods and services, as goods are physical objects, which are immediately available and can be transmitted between economic units, while services are "... a change in the condition of a person, or a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit" (p. 318), where the economic units may be the same. Therefore, services are not only immaterial goods, but, according to Hill, an autonomous category which in some sense are marketable and transable, too. Thus goods and services and the activities behind them have more similarities than productive and non-productive activities.

The implication of operating Hill's definition of productive activities, which is basically the same as that given by Read - i.e. the third person criteria - is that not only activities in the formal economy enter into the concept of work but so do non-market activities. Productive activities thus include all possible substitutes producing economic welfare, which is not reflected in the current National Accounts System.

However, the measurement of non-market activities is rather difficult in practice; some figures have to be estimated instead of being registered directly, which is of course a problem when doing national accounting. The objective, therefore, might be to extend the current National Account System by allowing non-productive activities to become part of a satellite system (Lützel, 1989).

### THE THIRD-PERSON CRITERIA

The third person criteria implies that market and non-market activities are to be considered productive when they contribute to the production of utility, i.e. final consumption. According to Hawrylyshyn (1978) this means that an economic - productive - activity might be defined as "...one which can be done by a third person without reducing its final utility value", where the final utility is allotted to the person delegating the activity to a third person. These activities are thus separated from other - consumption - activities, i.e. "If the utility is derived only through the "doing", or by the participation of the one who uses the good, then the activity is consumption" (Reid, 1934: 10), which means that another - a third person - cannot do the activity.



That most household tasks fulfil the third person criteria is proved by the fact that full substitutes exist, either as services performed in the household by paid workers - domestic servants, housekeepers, etc. - or in the shape of goods and services bought in the market - restaurant meals, laundry, etc. The buying of these goods and services show that the households are willing to pay and thus they value positively the product and the activities behind it. This also holds true concerning so-called professional childcare, although it might not be a full substitute for parental care, as it is primarily chosen as a necessity for mothers' supply of work to the labour market.

The criteria is also met by the fact that a considerable amount of household work is done for other members of the family. Although "the willingness to pay" criterion is not fulfilled in this case, the utility produced is proved transable and marketable since a household can be looked on as an internal market place where time and money are - unequally - exchanged between its members. Some of this work is performed to satisfy the needs of others who are unable to do so themselves, i.e. what Wærness (1977) calls care work, while other tasks are performed for others who can in fact perform them themselves. However, both kinds of work are

considered productive, which leads Hegeland (1973: 4) to make a distinction between this work and work which only fulfills one's own needs, or to quote: "All that I do in the home for myself, we call consumption. While all that I do in the home for others, for example my children or my spouse, we call production". According to such a market-oriented definition there is no productive work performed in single households, as much of the work done in families is thus excluded.

Chadeau (1985) gives a more comprehensive definition of household work and especially of care work, as the latter not only includes care for others but also care for oneself, if this could be done by others. Personal care such as dressing, styling and bathing can and in earlier times was done by servants. This means that the delimitation of productive activities will depend on which tasks are performed by "third persons" at the time, thus the delimitation depends on the current social norms and attitudes, or at least on others' being potentially competent to execute the activity and produce utility (Chadeau, 1985).

A widespread and more narrow definition of household work is given by Grønmo & Lingsom (1986), who state: "Household work



is un-paid work carried out in or for the household by members of the household" (p.177).

In all these definitions, the demarcation of third person work is not a question of the third person being paid for the work, or the third person being a member of the family. It is either a question of the production of utility through the doing or a question of who obtains the final utility of the activity. The only proviso is that the activity could be delegated to a third person, which characterizes the activities taken into consideration in the following.

## MEASURING HOUSEHOLD WORK - AND CARE WORK

Since the beginning of the '20s time-use data has been gathered in so-called Time Budget Surveys, which include Diaries where the respondents are asked to indicate the activities they performed the day before, and, if several activities were performed simultaneously - joint production -, to which one they gave the highest priority. The questions in Diaries have often been precoded which means that the respondents have to choose one out of a

definite number of activities.

In most diaries household work includes shopping/errands, housework, do-it-yourself work and carework, see Szalai (1972); Ås' (1982) calls these 'committed time' activities, although this is questionable as paid work also seems to be a commitment to men and more and more to women, too<sup>4</sup>. In the British and the Danish Time Budget Surveys' diaries the activities which might be considered productive household work are almost identical, i.e. in the Danish:

- |             |                               |
|-------------|-------------------------------|
| - shopping  | - shopping/errands            |
|             | - visiting public offices     |
|             | - visiting doctors etc.       |
| - housework | - food preparation            |
|             | - baking                      |
|             | - washing up                  |
|             | - clearing the table          |
|             | - cleaning                    |
|             | - washing and mending clothes |

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<sup>4</sup>Some economists argue that the decisions of supplying time to the labour market and household work are taken jointly, and even that of child care (Gustafsson, 1991) and sleep (Biddle and Hamermesh, 1989); this is why no one of these activities is to be considered subordinate to any other.



- Do-It-Yourself work
- other tasks
- gardening
- child care
- transportation of children
- taking care of children<sup>5</sup>

In some diaries care for others, i.e. mostly for the elderly, is to be found as a separate category, which is not, however, the case here, as the time spend on that activity is included in some of the other categories.

There are several advantages to applying the diary methodology. First, such data is the result of direct observation and does not require any theoretical assumptions as far as the categories are perceived identically by the respondents. Secondly, it ensures that every time interval during the day is registered and the respondents would seem to have few problems in remembering the kind of activities in which they were engaged, because everyday life for most people is based on routine activities. Third, by asking individuals about their use of time in absolute terms, and not their use of time relative to their spouse, no so-called interpersonal effects appear, which means that normative

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<sup>5</sup> Considered as the main tasks, like feeding, bathing, doing homework, etc.

considerations are to some extent avoided. Fourth, diary information is very useful for international comparisons, because the time unit is the same, i.e. opposite to as an example currency values, and diaries also document the distribution of labour time between the labour market and the household, which is not the case of other data-collecting techniques<sup>6</sup>. However, the perception of activities such as leisure and work might be different due to various cultural norms, which calls for cautiousness when interpreting the data.

Finally, the use of time in a specific activity is easily countable in diaries for which reason statistical analyses are simple. Nonetheless, this final argument is often used as a criticism of diary based time-use calculations. The argumentation is that it is implicitly assumed that time is monotonic, and not cyclical, because all sequences of time are given the same value independent of the time of day they appear, and their distribution during the day. Therefore, the structure of preferences, which shows the various values attached by individuals' to the doing of certain activities, is not exposed in time budget surveys. Although it is

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<sup>6</sup> For a comparison between time-diary techniques and estimate questions concerning measuring hours of paid work, see Robinson & Gershuny (1994).



rarely done, diary information allows different values to be put on different time-sequences, because the data is basically longitudinal - covering a time perspective, i.e. the day of the interview. This shows how the activities are segmentally organized, and valued.

Another criticism is that many short-lived activities are excluded, although they might be done frequently during the day. Personal care and other care activities are thus probably underestimated.

The point is also that the distribution of time between the spouses may be equal in time but not in tasks, because not all activities are divisible. The lack of divisibility means that "maximization requires optimal allocation of time, but time 'packaged' by task" (Berk & Berk, 1978: 439). The degree to which there is this lack of divisibility depends on the specification of tasks in the diary; i.e. there seems to be a general trend towards including more and more activities in the surveys, which makes it easier to find task-structures.

Efficiency is not measured either in ordinary time budget surveys, only the amount of time. This means that the efforts given to certain activities/tasks might be different for different members of

the family due to different experience and knowledge, and the technology applied - factors which do not emerge from the data. In other words, time-use data measures the input of labour into household production, not the output of the production.

Finally, the measurement of time-use by filling in diaries does not reveal the structure of responsibility among the family members in doing household work, nor is any information obtained of the preferences for responsibility for and performance of the tasks. In order to analyze the intra-familiar distribution of responsibility and preferences of household work, further data is required; see among others Geerken & Gove (1983) and Vanek (1980), and Pahl (1994) for a study of access to resources within marriage.

Despite these critiques, the diary-filling technique allows the amount and distribution of time-use by women and men in different families to be measured as the aggregate number of intervals multiplied by the length of the intervals in which the different activities were performed. This is basically true for all activities - shopping/errands, housework, DIY-work and care. The question is, however, how to measure the amount of time used in activities which are not recorded in the diary. An example of such



an activity is the indirect care related to the increasing amount of household work - exclusive of direct care - caused by marriage and having children, i.e. this corresponds to Hegeland's (1973) material care. Another example is so-called stand-by care: this means care given by parents with small children in the shape of looking after their children (Bonke, 1988), giving up other activities if necessary, when the care is not delegated to others such as nurses, kindergartens and the like (Wærness, 1973, Oakley, 1974 and Boalt, 1983). However, in the Danish Time Budget Surveys' diaries information on the "with whom" the activities were performed are gathered, although these data are not analysed here.

In many studies of women's affairs all household work is considered carework, for which reason it is unnecessary to delimit this work into different categories. In this article, however, household work is split up into shopping/errands, housework, DIY-work and (direct) child care recorded in the diary. Add to this indirect care; i.e. the increase in household production - exclusive direct care -, which occurs when singles become couples and/or when they have children. Stand-by care is also considered household work, since having children means parental supervision when no other arrangements are made, i.e. a third person criterion.

In other words, indirect adult care is measured as the surplus time<sup>7</sup> couples without children spend on shopping/errands, housework and DIY-work relative to that of singles without children, whereas indirect child care is measured as the time spouses in couples with children spend on the same tasks relative to that of couples without children. For single mothers and fathers indirect child care is estimated correspondently as the time these families spent on the above-mentioned tasks relative to that of single women and men. The direct care is registered in the diary, and, finally, the stand-by care has to be calculated as the amount of time parents - the mother in couples - spend at home with children younger than 7 years, as it is assumed that these children require constant supervision. However, because of lack of data the stand-by care is not measured here, although some estimations are to be found in Bonke (1994). Carework performed for other persons in or outside the family, which some Time Budget Surveys measure, is excluded in this article, too.

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<sup>7</sup> Surplus time, surplus work and care work are mentioned concurrently in this article.



## HOUSEHOLD WORK IN BRITISH AND DANISH HOUSEHOLDS

Table 1 shows the use of time in household work and labour work for 20-59 years old (i.e. the wife in couples) British and Danish women and men. For young singles the total amount of household work differs according to the sex, as single women work 14.2 hours a week in Britain and 9.6 hours a week in Denmark, while single men work only 11.1 and 7.6 hours a week, respectively. For couples, however, the distribution of time becomes more unequal - 24.2 and 15.1 hours for women compared to 14.4 and 10.7 hours for men -, and having children means an even more unequal distribution of time - 42.5 and 28.9 hours versus 18.6 and 13.3 hours -, since these women work more than twice as many hours as men in both Britain and Denmark. On the other hand, men work more hours in the labour market than women; thus, the total amount of work - the work-load - is approximately the same for the two sexes, belonging to the same life-group category; this holds true for both countries. In general, British women do more household work than Danish women, and so do the men, which is partly counterbalanced by Danish men and women spending more hours in the labour market than British men and women;

Table 1. Household work and labour work by women and men in different categories of households. Britain (1985) and Denmark (1987).

	Singles <45 years (A)	Couples wife <45 years (B)	Couples with children (C)	Singles with children (D)	Couples wife >44 years (E)	Singles >44 years (F)
BRITAIN						
(N:)	(100/108)	(95/130)	(430/515)	(26/88)	(149/195)	(21/47)
- hours a week, men/women -						
Shopping	3.3/4.4	3.7/5.2	4.6/8.0	4.3/7.7	4.1/6.1	4.7/6.7
Housework	4.6/7.5	4.2/14.7	4.7/23.0	5.3/17.8	5.3/22.3	10.5/17.7
DIY-work	2.9/2.2	6.3/3.7	6.4/3.0	4.4/3.0	7.3/4.9	2.4/4.9
Care	0.3/0.2	0.2/0.5	2.8/8.4	0.8/6.3	0.3/0.9	0.1/1.0
All household work	11.1/14.2	14.4/24.2	18.6/42.5	14.8/34.8	17.1/34.1	17.8/30.3
Labour work	33.4/35.6	41.2/31.1	38.2/13.3	21.5/12.6	35.0/16.8	33.0/11.5
All work	44.6/49.9	55.6/55.2	56.8/55.7	36.3/47.4	52.1/50.9	50.7/41.8
DENMARK						
(N:)	(461/261)	(174/199)	(528/575)	(20/70)	(390/336)	(100/184)
- hours a week, men/women -						
Shopping	2.3/2.4	2.6/3.2	2.0/3.4	2.3/2.5	2.1/3.4	3.7/3.5
Housework	3.2/5.6	4.7/9.8	3.9/16.1	10.0/13.4	4.8/17.9	7.2/12.6
DIY-work	2.0/1.3	3.3/2.0	4.9/3.5	4.5/3.2	5.4/3.6	3.9/2.2
Care	0.1/0.3	0.0/0.0	2.5/5.9	1.3/2.6	0.2/0.3	0.0/0.2



All household							
work	7.6/9.6	10.7/15.1	13.3/28.9	18.2/21.8	12.5/25.3	14.8/18.5	
Labour							
work	46.2/42.4	46.1/42.4	51.4/31.0	35.6/36.0	27.7/18.0	18.9/16.0	
All work	53.7/52.0	56.7/57.5	64.8/59.8	53.8/57.7	40.2/43.2	33.7/34.5	

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older Danish men (>44 years), however, work fewer hours a week than the British.

These findings are confirmed by regression analyses, where the effect of different socio-economic characteristics on time-use in household production are estimated, see tables 2 and 3. For Britain the sex seems to be the most important variable for explaining the variation in time used doing household work, while this is not as pronounced for Denmark. The same appears concerning the civil-status - married opposed to being a single -, whereas having children counts more in Denmark than in Britain.

Table 3 also shows that being employed - full-time or part time - means a greater reduction in hours spent on household work in Britain than in Denmark; the reason might be that British women and men in general work more hours in the household, meaning there are more hours to be substituted by paid work in the labour market than is the case of Danish women and men. Higher

education means less household work in Danish households, which is in accordance to economic theory presuming that a higher opportunity cost of time implies less household work and more paid work. All these variables taken together explain approximately 50 per cent of the variation ( $R^2$ ) in time used for household work in Britain, while they hardly explain 20 per cent of the variation in Denmark; the explanation may be that the family structure in Britain is more traditional than that of Denmark, i.e. the explanatory power of the variables found for Britain in 1985 was approximately the same as that found in Denmark in the middle of the '60s (Bonke, 1994).

Table 2. Variables in regression analyses of household work - definitions and values for sample. Britain (1985) and Denmark (1987).

Variable	Definition	Value for sample;	
		Britain	Denmark
HHW	Hours household work a week	26.571	17.332
SEX	Woman/men	.570	.504
CIVIL	Married/single	.759	.755
CHILD	Children/no children	.546	.531
AGE	>44 years/<45 years	.297	.294
EMPL	Employed/non-empl.	.654	.735
EDUC	Secondary or above	.343	.214
N of Cases		1996	2714



Table 3. Regression analyses (OLS) of household work - coefficients and T-values. Britain (1985) and Denmark (1987).

Variable	Britain		Denmark	
	B	T	B	T
SEX	15.117 <sup>a</sup>	27.645	10.376 <sup>a</sup>	17.571
CIVIL	8.095 <sup>a</sup>	12.097	2.8689 <sup>a</sup>	3.744
CHILD	7.551 <sup>a</sup>	12.470	6.681 <sup>a</sup>	10.113
AGE	1.453 <sup>c</sup>	2.271	.423	0.636
EMPL	-12.551 <sup>a</sup>	-21.881	-5.627 <sup>a</sup>	-8.289
EDUC	.326	0.559	-1.435 <sup>c</sup>	-1.988
(Constant)	15.350 <sup>a</sup>	17.493	10.708 <sup>a</sup>	13.088
Adj. R Square	.5076		.1853	

<sup>a,b,c</sup>Significant at .001, .01 and .05-level.

In table 4 the number of hours spent in some categories of households is compared to that of other categories. In this way the work in a given category is divided into work for oneself - the (A) and (F) categories -, work for the spouse (B-A), (D-C) and (E-F), and work for children (C-B), where the last four categories are considered care work, i.e. the letters in the brackets are referring to table 1. Not surprisingly, the amount of adult care work and child care work - cf. Wærness' service work and care work - are different, as the latter is greater than the former. 7.3 hours a week is the price a British woman has to pay for being married, while a man only pays 1.8 hours; in Denmark the two sexes

approximately pay the same - 3.5 hours for women and 2.4 hours for men. The price of having children is three to four times as great for women as that of being married, while men pay only two times as many hours. The price of having children has increased slightly in the last decades for women and men in Britain as well as in Denmark, while the price of being married has decreased considerably in both countries; most markedly for women, who still pay the most, however. When parents with children divorce, the work-load of British women decreases significantly, which indicates that the adult care given to the spouse - the price of being married - is paid back, and in the case of Denmark in 1964 also the child care - the price of having children - decreases slightly for women, i.e.  $| (D-C) | > (B-A)$ . Although there might be fewer children in divorced, single families than in couples, this seems to explain only a small part of the time-use differentials (see, footnote 2 in table 4). For Danish women and Danish and British men most of the findings - (D-C) - are not significant, the beta-coefficients are very small, nonetheless, the signs are not the same as a positive price of divorce is found for Danish men. For older people (>44 years) the price of staying together is only paid by women, while men are favoured when not living alone. Nonetheless, the price paid by women and the benefits gained by



men have decreased over the last decades, although none of the present findings are significant.

Table 4. The price of marriage, children, divorce and staying together; i.e. the numbers of weekly hours giving (direct and indirect) care to others in the household. Britain (1975, 1985) and Denmark (1964, 1975, 1987).

	Marriage (B-A) <sup>1</sup>	The price of; Children (C-B) <sup>1</sup>	Divorce (D-C) <sup>1,2</sup>	Staying together (E-F) <sup>1</sup>
Household work by men and women (hours a week)				
Britain				
- 1985	1.8/7.3 <sup>b</sup>	4.5 <sup>c</sup> /19.5 <sup>a</sup>	-1.8/-6.4 <sup>c</sup>	-1.0/4.1
- 1975	4.9 <sup>b</sup> /13.4 <sup>b</sup>	0.8/15.2 <sup>a</sup>	0.9/-13.7 <sup>c</sup>	-6.9 <sup>c</sup> /8.3 <sup>c</sup>
Denmark				
- 1987	1.9/3.5	3.7/13.6 <sup>b</sup>	6.5/-6.3	-3.5/7.6 <sup>c</sup>
- 1975	3.6/8.4 <sup>c</sup>	-1.7/11.9 <sup>c</sup>	9.8/-8.0	-3.3/8.7 <sup>c</sup>
- 1964	-0.5/16.6 <sup>b</sup>	0.6/11.6 <sup>c</sup>	-1.6/-19.1 <sup>c</sup>	-4.2 <sup>c</sup> /15.7 <sup>b</sup>

<sup>a,b,c</sup>Beta-coefficients >0.45, >0.30 and >0.15.

<sup>1</sup>The time-use differentials, see table 1, are standardized by age, i.e. Multiple Classification Analysis.

<sup>2</sup>The time-use differentials are also standardized by children's age, i.e. the proportion of preschool children to all children. The implication of standardizing by the number of children as well is only moderate in the case of Danish women and men in 1987, i.e. the only data including this information, as the findings are -6.0 and 7.3 hours a week, respectively.

These findings, it should be emphasized, are not influenced by age - i.e. couples might be older than singles -, as the different groups are standardized pair-wise by age, and in the case of divorce also the age of children is taken into account.

Finally, to illustrate the quantity of child care work, inclusive of stand-by care, in Danish households the total number of hours has been calculated to 1.9 billion, which is equal to one million full-time jobs - the Danish labour force consists of 2.4 million people. In other words: the care work parents do for their 0-2 old children is, in terms of hours, 18 times the work performed in professional day nurseries, etc., and for children aged 3-6 it is 19 times greater than in kindergarten, etc., while for 7-17 year old children the care given by their parents is 6 times that of care given in after-school centers, etc. (Bonke, 1988).

## VALUING HOUSEHOLD WORK

Household production contributes to welfare as do other productions; however, the problem is that there is no price setting and household production is thus left out of National Accounts.



Nonetheless, a forthcoming UNDP-report contains estimates of the money value of household production in several countries, and many proposals for such estimations have appeared in recent years, see Bonke (1993a), Chadeau (1992) and Goldschmidt-Clermont (1990). This article includes some remarks about the estimation procedure when valuing household production illustrated by estimates of the money value of the household production, inclusive of carework, in different countries.

Principally, there are different approaches to valuing household production. According to output-based principles; first, the outputs from productive household activities and their market substitutes have to be identified, and second, the household production is valued at the market price of these substitutes. This procedure implicates, that a money value to household production has to be imputed, and intermediate consumption subtracted to arrive at gross value added, and further, also the net indirect taxes and consumption of fixed capital may be subtracted in order to find the imputed value of unpaid household labour (Lützel, 1989). However, this data required on goods and services produced within households and their market equivalents are not all available, which limit the feasibility of this method.

Alternatively, an input approach consisting of imputed money value to labour input directly, and then added to fixed capital consumption, net indirect taxes and intermediate consumption obtaining an estimate for the value of non-market household production, is normally used because the required data are more readily available.

Although this method provides no information on the labour productivity or serves as a mean for analyzing whether households are more efficient or cheaper in their production than comparable market units, it is the most usually operated. Here, however, only the value of household work is estimated leaving consumption of fixed capital, intermediate inputs and direct taxes out of account.

A distinction appears, as the input approach valuing household work includes a cost principle (OC: Opportunity cost of time method) and two market price principles (SP: Specialist substitute method, and GL: Global substitute method).

According to the first principle, it is assumed that the actual distribution of time indicates the preferences for doing different



activities, which means that at the margin every activity has the same value yielding the highest level of welfare, because any other distribution of time would not be optimal. In other words labour work is the alternative to household work, why one offers disposable income earned at the labour market, when doing household work assuming freely distribution of time at the margin. The wage-rate or the reservation wage-rate for the housekeepers (Bonke, 1994), is thus an appropriate measure of the value of time, including household work.

The other principles state that by doing things oneself one save money, and exactly as many as the price of equivalent services are. The assumption is that minimum time needed may be manifested by the performance of similar activities on the market, assuming that the individual does not derive any direct utility, and hence has no utilitarian reason to expend extra time (Hawrylyshyn, 1977). In this case, the wage rates of wage earners supplying these services on the market measure the value of the household work.

In choosing the most appropriate principle of estimating the money value of household production one may draw the attention to the purposes pursued of such measurements. If the question is

to study allocation of resources in and between households and thereby analyzing individual behaviour an orientation towards economic micro-theory is the most appropriate, while more macro-oriented economic theory is preferable when comparing household production with productive market-oriented activities.

As Goldschmidt-Clermont (1990) has pointed out the first aim is best fulfilled when operating opportunity-cost-principles, where the value of labour input in household production is evaluated by the lost income net of taxes. Considering the second aim, including of course the solving of statistical problems, market-alternative principles are the most appropriate ones when estimating the money value of labour input. However, output measurements employing the price of market substitutes products as equivalents - or the value added to them - are also relevant and have the possibility of measuring labour and capital values simultaneously. For a more detailed discussion of opportunities and drawbacks in operating these principles, see among others Chadeau (1992) and Goldschmidt-Clermont (1990).



## THE VALUE OF HOUSEHOLD WORK IN BRITAIN, DENMARK AND OTHER COUNTRIES

In the following estimations of the money value of household work in different countries are performed by using an opportunity cost principle, a market alternative principle and a specialist substitute principle letting output-principles alone.

First, however, the value of household work, including care work, in Danish and British households is calculated by applying only the SP-principle, which means servants would be the substitute for shopping/errands, housework and direct care, and unskilled labourers for DIY-work, or more precisely, the time-use in these tasks is valued as though they were performed by these professionals at their ordinary wage-rates<sup>8</sup>.

By multiplying professionals' wage-rates by the average time-use in every activity carried out in different types of households - singles and the wife in couples are 20-59 years old -, and assuming

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<sup>8</sup> British servants; 2.56 £/hour (catering, cleaning, hairdressing and other personal service). Danish servants; 76 DKK/hour (domestic help). British unskilled labourer; 3.28 £/hour (carpenters and joiners - others). Danish unskilled labourer; 101 DKK/hour (specialized workers).

this work-load holds throughout the year - 50 work-weeks -, the money value of household work, inclusive of care work, can be estimated. For a comparison between Britain and Denmark the money value of household work is measured as a percentage of National Income (NI), which is more appropriate than the GNP because it is exclusive of Capital Consumption, i.e. Net National Product at factor cost.

Table 5 shows that the total value of household work in couples with children in Denmark and Britain are of equal size amounting to 15.5 per cent of the NI in both countries, while the household work in couples without children is nearly 5 times bigger in Britain than in Denmark - 14.0 and 2.9 per cent of the NI -, mainly due to the great number of these families in Britain. Singles without children work to the value equal to approximately 5 per cent of the NI in both countries, and singles with children to the value of 1.2 in Britain and 1.9 in Denmark. Furthermore, the table shows that the work for others - adults and children - amounts to 12.6 and 10.8 per cent of the National Income in Britain and Denmark, and that the work is mainly done by women - about 80 per cent against 20 per cent by men in both countries.



Table 5. The money value of household work in different households. Britain (1985) and Denmark (1987).

	Work for oneself	Work for other adults (adult care)	Work for children <sup>1</sup> (child care)	Total
Per cent of National Income; UK/DK				
Singles, no children				
- women	3.4/2.4	./.	0.1/0.1	3.5/2.5
- men	1.2/2.4	./.	0.0/0.0	1.2/2.4
Singles, children				
- women	0.5/0.8	./.	0.7/0.9	1.1/1.7
- men	0.0/0.1	./.	0.0/0.1	0.1/0.2
Couples, no children				
- women	6.3/1.1	2.3/0.6	0.2/0.0	8.8/1.7
- men	4.6/1.0	0.6/0.3	0.1/0.0	5.2/1.2
Couples, children				
- women	3.6/3.6	2.3/2.0	4.6/4.8	10.5/10.4
- men	3.1/3.1	0.8/1.1	1.1/0.9	4.9/5.1
All households	22.7/14.5	6.0/3.9	6.6/6.9	35.3/25.3
Household work				
- women's	13.8/7.9	4.6/2.6	5.5/5.8	23.9/16.2
- men's	8.9/6.6	1.4/1.3	1.2/1.1	11.4/9.0

<sup>1</sup>Direct and indirect child care of children, exclusive of stand-by care.

The most interesting finding from an equal rights perspective, however, is the value of care work in couples. The value of this work - for other adults and children - is estimated at 25.1 billion £ for British women and at 6.7 billion £ for British men, while the

corresponding figures of Denmark are estimated at 43.8 and 13.5 billion DDK. This means that 18.4 billion £ and 30.3 billion DDK - the difference between women's and men's work for others in the family - represents the additional price British and Danish women pay compared to British and Danish men, when becoming part of a couple.

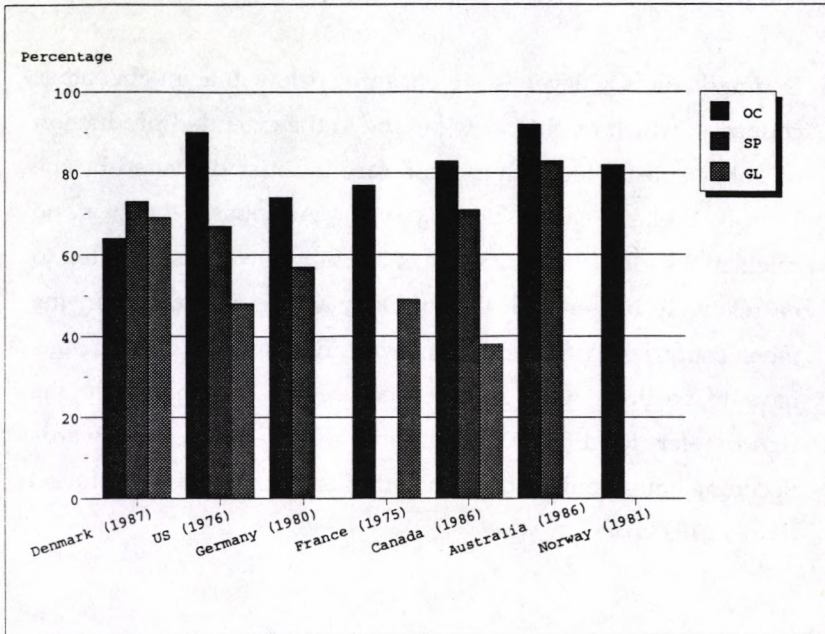
However, the work can also be estimated as the difference in women's and men's time-use when they are part of a couple, independently of how much household work they perform as singles. This means that equality will appear if there is no difference and thereby no care work, and as a consequence, half the number of hours that one spouse works more than the other represents inequality in the distribution of household work.

Calculated in this way the work, i.e. the care work offered to British men by British women in 1985, values to 12.2 billion £, and that of Danish women to Danish men to 17 billion DDK in 1987. In percentage of the National Income these amounts of money represents 4.6 and 2.9 in Britain and Denmark, respectively, while the total production in British and Danish households under consideration valued 35.3 and 25.3 per cent of the National



## Income.

Figure 6. Value of household work as a percentage of private consumption per capita in different countries.



OC: Opportunity cost of time method.

SP: Specialist substitute method.

GL: Global substitute method.

n.a.: Not available.

Source: Chadeau (1992) and own calculations.

Finally, figure 6 shows the value of household work as a percentage of private consumption in National Accounts for

different countries, as the per capita values in dollars using purchasing power parities for private consumption are used. The results are that household work amounts from two-thirds up to more than 90 per cent when operating an opportunity-principle, and relatively less when using the other principles. In the case of

Denmark the OC-level is significantly below that of the other countries, which might partly be due to the extended production of public substitutes such as child care facilities delivered by the Danish Welfare State (Bonke, 1995). Although, there is no calculations for Britain the value of household work is expected to be relatively bigger than that of Denmark, as is the case in the other countries in figure 6. However, international comparisons have to be done with caution, because the information in the figure refer to different years and a general trend towards declining household production in the last decades has been found (Bonke, 1993a).

## CONCLUSION

Following a discussion of the concept of work and care, and how to measure these activities when taking place in the households, the time spend among British and Danish women and men in different life-stages are figured out.



The calculations have shown that the price in time units a British woman has to pay for being married is four times as high as that a man has to pay, while in Denmark the two sexes approximately pay the same. For women the price of having children is three to four times as high as that of being married, while men pay only two times as many hours. Furthermore, the price of having children has increased slightly in the last decades for women and men in Britain as well as in Denmark, while the price of being married has decreased considerably in both countries; most markedly for women, who still pay the most, however. If parents with children divorce, the work-load of British women decreases significantly, which indicates that not only the adult care given to the spouse - the price of being married - is paid back, also the child care - the price of having children - decreases slightly for women and for men.

Also the methodology of measuring the money value of the household work has been discussed in the article, as are estimations of this work performed. The result is among others that household work makes an immense contribution to national income, and that the exclusion of this work from National Accounts means that 20 per cent of total income in Denmark and 25 per cent in Britain are not considered part of the official figures measuring welfare. Furthermore, the consequences are that the development in this welfare is not measured, and at the same time international comparisons become uncertain; excluding household

work - as well as return to household appliances - from national accounts. One of the consequences of this inaccurate accounting is that Denmark is contributing more to the EU because of a relatively smaller household production - and a pronounced substituting public welfare sector - than most of the other member countries, i.e. not for political reasons but solely because of the method of calculating welfare.

Another consequence is that analyses of the distribution of economic resources are insufficient when the value of household work (Bryant & Zick, 1985, and Bonke, 1992a & 1992b) and the return of household appliances are excluded. Are poor families really poor, and do certain European regions really requiring economic contributions? The answer is yes, but to what extent may depend on all available resources - obtained by labour work as well as by household work.

Finally, from an equality point of view, the type of income earned is not immaterial. Labour-market income is liquid and provides consumption opportunities, whereas the product of household work has generally already been consumed. In the event of divorce, or the death of the husband, the distribution will imply that the woman is worse off in the labour market than if there were no division of labour in the household. It is therefore natural that women have to be compensated for their contribution to the man's career (Bonke, 1993b), which requires the measurement of



household work, inclusive care work, and the valuation of this work - from an economic point of view.

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